

Serial No.: 09/557,088

IN THE CLAIMS:

1. (Currently Amended) A semiconductor inspection method comprising:

extracting data representing adjacent lines of a logical circuit of a semiconductor apparatus represented by layout data, for avoiding a short circuit occurring between such lines;

simultaneously detecting any stuck-at failures in the logical circuit and obtaining input logical values from the logical circuit such that extracted data representing one of the adjacent lines has a logical value "1" while extracted data representing the other of the adjacent lines has a logical value "0";

~~selecting the setting adjacent input logical values of lines of the logical circuit to logical values of "0" and "1" and input lines of the logical circuit other than the adjacent lines to a logical value of "1" or "0", such so that an output logical value that is expected when the input logical values setting a pair of the logical values "0" and "1" are input to the logical circuit, an expected logical output value is output by the logical circuit when no short circuit exists between the~~

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adjacent lines and an unexpected output logical value is output
when changed by a short circuit of exists between the adjacent
lines; and

monitoring an output of a logical circuit that receives the
input logical values, and comparing the monitored output with an
output logical value that is expected when the input logical
values are input to the logical circuit.

C¹ 2. (Currently Amended) A semiconductor inspection method
comprising:

extracting data representing adjacent lines of a logical
circuit of a semiconductor apparatus represented by layout data,
a distance between said lines being equal to or less than a
threshold;

simultaneously detecting any stuck-at failures in the
logical circuit and obtaining input logical values from the
logical circuit such that extracted data representing one of the
adjacent lines has a logical value "1" while extracted data
representing the other pf the adjacent lines has a logical value
"0";

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C¹
~~selecting the setting adjacent input logical values of lines~~
of the logical circuit to logical values of "0" and "1" and
input lines of the logical circuit other than the adjacent lines
to a logical value of "1" or "0", such so that an output logical
~~value that is expected when the input logical values setting a~~
~~pair of the logical values "0" and "1" are input to the logical~~
~~circuit, an expected logical output value is output by the~~
logical circuit when no short circuit exists between the
adjacent lines and an unexpected output logical value is output
when changed by a short circuit of exists between the adjacent
lines; and

monitoring an output of a logical circuit that receives the
input logical values, and comparing the monitored output with an
output logical value that is expected when the input logical
values are input to the logical circuit.

3. (Currently Amended) A computer-readable recording
medium comprising a program for causing a computer the execute:

extracting data representing adjacent lines of a logical
circuit of a semiconductor apparatus represented by layout data,

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said adjacent lines having a possibility of a short circuit occurring between such lines;

simultaneously detecting any stuck-at failures in the logical circuit and obtaining input logical values from the logical circuit such that extracted data representing one of the adjacent lines has a logical value "1" while extracted data representing the other of the adjacent lines has a logical value "0";

selecting the setting adjacent input logical values of lines of the logical circuit to logical values of "0" and "1" and input lines of the logical circuit other than the adjacent lines to a logical value of "1" or "0", such so that an output logical value that is expected when the input logical values setting a pair of the logical values "0" and "1" are input to the logical circuit, an expected logical output value is output by the logical circuit when no short circuit exists between the adjacent lines and an unexpected output logical value is output when changed by a short circuit of exists between the adjacent lines; and

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monitoring an output of a logical circuit that receives the input logical values, and comparing the monitored output with an output logical value that is expected when the input logical values are input to the logical circuit.

4. (Currently Amended) A computer-readable recording medium comprising a recorded program for causing a computer to execute:

C' extracting data representing adjacent lines of a logical circuit of a semiconductor apparatus represented by layout data, a distance between said lines being not greater than a threshold;

simultaneously detecting any stuck-at failures in the logical circuit and obtaining input logical values from the logical circuit such that extracted data representing one of the adjacent lines has a logical value "1" while extracted data representing the other of the adjacent lines has a logical value "0";

~~selecting the~~ setting adjacent input logical values of lines
of the logical circuit to logical values of "0" and "1" and

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C/ input lines of the logical circuit other than the adjacent lines
to a logical value of "1" "0", such so that an output logical
value that is expected when the input logical values setting a
pair of the logical values "0" and "1" are input to the logical
circuit, an expected logical output value is output by the
logical circuit when no short circuit exists between the
adjacent lines and an unexpected output logical value is output
when changed by a short circuit of exists between the adjacent
lines; and

monitoring an output of a logical circuit that receives the
input logical values, and comparing the monitored output with an
output logical value that is expected when the input logical
values are input to the logical circuit.
